

REMARKS

Initially, Applicants would like to express their appreciation to the Examiner for the detailed Official Action provided.

Upon entry of the above amendments claims 36-38 will have been added. Claims 1-20 and 28-35 have been withdrawn from consideration as directed to a non-elected invention. Applicants allow the withdrawn claims to remain pending, i.e., subject to possible rejoinder.

Applicants respectfully request reconsideration of the rejections, and allowance of all the claims pending in the present application.

Rejection Under 35 U.S.C. §102 and 103

In the Official Action, the Examiner rejected claims 21 and 23-26 under 35 U.S.C. § 102(b) as being anticipated by OKUNO et al. (U.S. Patent No. 5,338,008); and

the Examiner rejected claim 27 under 35 U.S.C. § 103(a) as being unpatentable over OKUNO in view of CAMPBELL (U.S. Patent No. 4,334,646).

Applicants respectfully traverse the Examiner's rejections.

In particular, claim 21 sets forth a solder bump forming apparatus including: a heating device is provided for heating the solder composite from a first side of the substrate, wherein the heating device blows hot air, and wherein the blowing hot air of the heating device does not directly come in contact with the solder composition on the substrate within a space through which the substrate is conveyed; and a thermostat device for controlling a temperature of the solder composition is provided at a position above a mount plate, which is located over a second side of the substrate, wherein the thermostat device includes a system in which a cool air or hot

air of the thermostat device does not directly come in contact with the solder composition on the substrate within the space.

In setting forth the above rejections, the Examiner now indicates that fan 20 may be considered a heating device. In this regard, the Examiner asserts that the air of fan 20 does not come into contact with a substrate conveyed through the space. Further, the Examiner apparently considers heating element 7 to be part of the cooling thermostat device (see last 2 lines in page 3 of the Official Action).

Contrary to the Examiner's assertions, Applicants submit that the devices of the applied prior art are structurally very different from the presently claimed invention.

In particular, Applicants submit that OKUNO discloses the gas being "heated by a series of electric heaters 7 so that the heated hot gas is blown through the hot blowing port 4." See Column 4, lines 11-14, in OKUNO.

Therefore, Applicants submit that, if the Examiner is to be consistent with his interpretation of OKUNO, the air of the thermostat device (of which the Examiner indicates heating element 7 is a part of) clearly is circulated within the space that conveys the substrate; and as such, would come into direct contact with the substrate (and solder composition). That is, since OKUNO discloses the hot gas, heated by elements 7, passing through blowing ports 4. See also Figure 1 in OKUNO.

Similarly, Applicants submit that the cooling device 10 (which the Examiner indicates as also being part of the thermostat device) also circulates are within the space through which the substrate is conveyed.

Applicants submit that the aforementioned distinctions are further illustrated in Figure 2 of OKUNO which clearly shows that air comes into contact with the substrate (and solder composition) as the substrate is conveyed through the space.

Further, regarding the Examiner's arguments concerning *functional limitations*, Applicants submit that it is well settled law that "[a] functional limitation must be evaluated and considered, just like any other limitation of the claim, for what it fairly conveys to a person of ordinary skill in the pertinent art in the context in which it is used. A functional limitation is often used in association with an element, ingredient, or step of a process to define a particular capability or purpose that is served by the recited element, ingredient or step." In *Innova/Pure Water Inc. v. Safari Water Filtration Sys. Inc.*, 381 F.3d 1111, 1117-20, 72 USPQ2d 1001, 1006-08 (Fed. Cir. 2004).

In this regard, for reasons discussed supra, Applicants submit that it is clear that the device of OKUNO lacks structure necessary to prevent cool air or hot air of the thermostat device from coming into direct contact with the solder composition on the substrate within the space.

Thus, Applicants submit that OKUNO, alone or in any properly reasoned combination, fails to disclose at least the presently claimed thermostat device including a system in which a cool air or hot air of the thermostat device does not directly come in contact with the solder composition on the substrate within the space, as generally recited in claim 21, much less, the features recited in newly-added claims 36-38.

Further, Applicants submit that CAMPBELL does not disclose anything that can reasonably be considered to supply the above-discussed deficiencies in OKUNO.

Applicants further submit that support for the features recited in claims 36-38 of the present disclosure can be found in at least page 29, lines 7-12, page 30, lines 12-17, and Figure 1 of the present Disclosure. Accordingly, Applicants submit that no new matter is believed to be introduced by entry of the present Amendment.

Accordingly, Applicants submit that the rejections of claims 21 and 23-27 under 35 U.S.C. § 102 and 103 are improper and should be withdrawn.

In view of the remarks herein-contained, Applicants submit that independent claim 21 is in condition for allowance. With regard to dependent claims 23-27 and 36-38, Applicants assert that they are allowable on their own merit, as well as because of their dependencies from independent claim 21, which Applicants have shown to be allowable.

Thus, it is respectfully submitted that all of the claims in the present application are clearly patentable over the references cited by the Examiner, either alone or in combination, and an indication to such effect is respectfully requested, in due course.

SUMMARY

Applicants submit that the present application is in condition for allowance, and respectfully requests an indication to that effect. Applicants have argued the allowability of the claims and pointed out deficiencies of the applied references. Accordingly, reconsideration of the outstanding Official Action and allowance of the present application and all the claims therein are respectfully requested and is now believed to be appropriate.

Should the Examiner have any questions, the Examiner is invited to contact the undersigned at the below-listed telephone number.

Respectfully submitted,
Masaru SHIRAI et al.

A handwritten signature in black ink, appearing to read 'B. Bernstein', with a long horizontal flourish extending to the right.

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